

# ABSTRACT

A high intensity discharge lamp, especially for optical projection systems, in one embodiment uses an anode electrode, a cathode electrode and a cylindrical envelope of single crystal (SC) sapphire. The fill may contain hydrogen, chlorine, sodium, scandium, sulfur and selenium and is under pressure exceeding 20 atmospheres. The lamp produces a continuous non-flash arc and generates a correlated color temperature between 6500 and 7000 degrees Kelvin and an efficacy exceeding 60 lumens/watt.